PROCEEDINGS OF THE DOD TECHNICAL INFORMATION CONFERENCE FOR R&D MANAGERS 16-17 MARCH 1981

DEPUTY UNDER SECRETARY OF DEFENSE

FOR

RESEARCH AND ENGINEERING

(RESEARCH AND ADVANCED TECHNOLOGY)

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20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*
Approximately 90 scientists, engineers, and technical managers from Government and industry participated in the conference and workshop sessions at the National Defense University. The principal recommendations were: (1) an OSD level technical information focal point should be designated; (2) technical information advisory council should be appointed; (3) a DoD technical information program plan should be developed; and (4) the Defense Technical Information Center should be designated as a major program element.

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RESEARCH AND
ENGINEERING

29 May 1981

MEMORANDUM FOR THE UNDER SECRETARY OF DEFENSE
FOR RESEARCH AND ENGINEERING

Through: THE DEPUTY UNDER SECRETARY OF DEFENSE
FOR RESEARCH AND ENGINEERING (RESEARCH
AND ADVANCED TECHNOLOGY)

SUBJECT: Recommendations of the DoD Technical Information
Conference for R&D Managers

I am pleased to submit the Proceedings of the subject conference
which was held on 16-17 March 1981. By any measure the conference
was a success and the stated objectives were accomplished.

Approximately 90 scientists, engineers, and technical managers
from Government, universities, and industry participated in the
conference and workshop sessions. The principal recommendations
for improvements to the Defense Scientific and Technical Informa-
tion Program were: (1) an OSD level technical information focal
point should be designated; (2) a technical information advisory
council should be appointed; (3) a DoD technical information
program plan should be developed; and (4) the Defense Technical
Information Center should be designated as a major program element.

The Proceedings have been reviewed by the principal Army, Navy,
Air Force, and Defense Logistics Agency participants of the
conference. I endorse and submit the recommendations of the
conference for your consideration.

George Gamota
Director, Research and
Technical Information Office

Attachment

EXECUTIVE SUMMARY

The DoD Technical Information Conference for R&D Managers was held on 16-17 March 1981 at the National Defense University, Fort Lesley J. McNair, Washington, D.C. The conference was sponsored by the Deputy Under Secretary of Defense for Research and Engineering (Research and Advanced Technology) and hosted by the Director, Research and Technical Information Office.

The primary objective of the conference was to bring together a large cross section of DoD in-house and contractor scientists, engineers and technical managers to assist in the planning of the Defense Scientific and Technical Information Program (STIP). A secondary objective was to develop recommendations for program improvement, effort and direction in broad areas that define major scientific and technical information issues. These issue areas were: (1) technical information program management, (2) technical document production and access, (3) computerized information systems and data bases, and (4) information transfer services and applications.

The following recommendations for the STIP improvement and direction were made. These are listed in order of importance.

Priority	Recommendation
1	Appoint a permanent DoD technical information focal point at the OSD level to coordinate management information reporting systems and requirements among DoD Military departments and agencies, quality assurance, and visibility of the Defense STIP.
2	Create an advisory council on technical information management composed of the DoD Military department and agency technical information focal points. Charge this group with providing advice and guidance to the DoD technical information focal point.
3	The DoD technical information focal point should develop a plan to provide for the personnel, financial, and facility resources required to support the Defense STIP.

Priority	Recommendation

4   Designate the Defense Technical Information Center (DTIC) as a major element of the Defense STIP to provide centralized multifunctional services with the DTIC Administrator directly responsible to USDRE.

5   The DoD technical information focal point should perform a study of the R&D Program Planning, R&T Work Unit Information System, and IR&D management information data bases. The study emphasis should be on improving accuracy, timeliness, and utilization.

6   The DoD technical information focal point should perform a review and analyze the Information Analysis Center (IAC) program. The review should explore mission, management, and operations and make recommendations for a dynamic integrated information system.

7   Incorporate provisions for accepting nonprint media into the DTIC system.

8   Charge DTIC with the responsibility of providing a central, small-source reference service for information resources and data bases. This will include the development and maintenance of a centralized "data base of data bases" containing references to DoD and, if appropriate, other Government and commercial data bases, as well as the unclassified (nonintelligence) foreign literature and data bases.

9   Develop mechanisms for early dissemination of the results of science and technology efforts and incorporate provisions for accepting this information into the DTIC system.

10   Develop and maintain a comprehensive data base at DTIC citing the existence and location of all DoD-sponsored technical reports.

11   Develop a system for evaluating the DTIC technical report collection. This includes the evaluation of subject content areas for balance and completeness as well as the sources of contributors (or lack of contributors).

12   Retain and enhance DTIC's ability to maintain classified data within its data bases and provide access to such data.

Priority	Recommendation
13	Charge DTIC with the responsibility to work with the DoD Military departments and agencies to develop a plan to help improve the accessibility by contractors and prospective bidders to Military publications (specifications, manuals, handbooks, etc.) such as those that are cited in the request for proposals and bids.
14	The DoD technical information focal point will develop a plan to provide funding for research in technical information services and techniques. This should include both exploratory and applied research.

PROCEEDINGS OF THE
DOD TECHNICAL INFORMATION CONFERENCE FOR R&D MANAGERS
16-17 March 1981

National Defense University
Fort Lesley J. McNair
Washington, D.C.

Office of the Deputy Under Secretary of Defense
for Research and Engineering (Research and Advanced Technology)
Office for Research and Technical Information
Washington, D.C. 20301

Dr. George Gamota and Mr. Hubert E. Sauter

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Ms. Jacqueline Myers, Command Support, Defense Logistics Agency

INTRODUCTION

SPONSORSHIP

The conference was sponsored by the Deputy Under Secretary of Defense for Research and Engineering (Research and Advanced Technology) and hosted by the Director, Research and Technical Information Office, Office of the Deputy Under Secretary of Defense for Research and Advanced Technology.

PURPOSE

The primary purpose of the conference was to revitalize the Defense Scientific and Technical Information Program (STIP) consistent with the new emphasis of the Federal Government on information as a resource. A secondary reason for having the conference was to provide a forum in which the proponents and users of technical information would discuss important scientific and technical information issues with the aim of improving the Defense STIP.

OBJECTIVES

The principal objective of the conference was to bring together a large cross section of DoD in-house and contractor scientific and technical management decision-makers to assist in planning the Defense STIP by developing recommendations for program improvement and direction in the broad issue areas for which the Defense STIP is responsible. These issue areas were:

- Technical information program management

- Technical document production and access

- Computerized information systems and data bases

- Information transfer services and applications

At the completion of the conference, the participants were expected to have an understanding of the Defense STIP, the need for DoD Military department and agency RDT&E support of in-house technical information services, and a feeling of having contributed to the initial formation and coordination of Defense STIP direction and priorities.

PARTICIPANTS

Approximately 100 participants were sent invitations. They
included scientists, engineers, technical managers, and
information services managers representing DoD Military
departments, DoD agencies, and DoD contractors (industry and
university).

APPROACH/PROGRAM

The conference program was in three parts: the first part was
a half-day plenary session in which the Defense STIP mission was
reaffirmed and concerns and issue areas were identified; the
second part was two half-day working sessions in which the
participants were organized into four panels each day to review
and react to Defense STIP issue areas; and, the final part of
the program was a half-day final plenary session for presenta-
tion and synthesis of the findings of the four panel areas.

ISSUE AREAS

GENERAL

The Defense Scientific and Technical Information Program (STIP) issue areas are grouped into four broad categories of similar functions which incorporate operations, needs, and concerns. These categories are arbitrarily identified as issue areas and are to be considered a strawman for reaction as to whether the individual issues are appropriate, complete, and reflect an appropriate level of importance.

ISSUE AREA I: DEFENSE TECHNICAL INFORMATION PROGRAM MANAGEMENT

This area reflects the management philosophy of treating information as a valuable resource, comparable to financial and personnel resources. Incorporating this philosophy this issue area deals with:

- The traditional technical and administrative managerial responsibilities consisting of program structure and organization, organizational development and dynamics of program control and assessment, and policy formulation. The principal need is to serve the technical and managerial needs of not only the DoD community, but also the producer, the processor, and the user of technical information.

- The coordination point for applying information systems and products to the needs of DoD research and development program managers. The principal need is to perform information requirement assessments on a proactive basis.

- The continuing need to support information science and information technology to identify information opportunities, applications, and issues needing exploitation or exploration. The principal need is to perform research and development in areas of promising technology or payoff for improvements in information processes and services.

4

Technical and Administrative Issues

A coordinated and coherent Defense STIP policy, organization, and management is needed.

The effects of new and changing national and international information policy, Federal regulations, and legislation should be reviewed and assessed.

Improvements of information worker productivity are needed at all levels, i.e., in the office, in the laboratory, in the technical library, and in DTIC.

Technology should be applied to labor-intensive functions to reprogram resources for new services or developmental activities.

A logical and acceptable rationale and policy should be developed for when, how, and how much to charge for information services and products, and to whether (or under what circumstances) full cost recovery is appropriate.

Methodologies that estimate, measure, or predict the benefits (or utility) of information services should be developed for use in the cost/benefit studies.

Improvements are needed in the promotion, awareness, and training of information services and resources.

Policy on cooperation versus competition with the private sector in providing or acquiring information services should be developed.

Decision Support Issues

DoD managers, administrators, and decision-makers, at all levels, should make more effective use of existing systems, devices, and techniques to assist in the management and modification of data and information needed in the performance of their functions.

The accessibility and use of information mangement tools to improve the handling and control of work files, program data, budgets, etc. should be improved or modified.

Resources for, and use of, information or decision support systems and devices should be reprogramed and transferred from office overhead (or a luxury category) to higher priority use by managers.

Research Issues

Information R&D that is being performed within DoD should be identified (R&D is fragmented; has low visibility; is mission oriented, local or esoteric, and not related to Defense STIP needs).

Adequate justification/criteria for R&D planning information should be developed (endorsement of reasonable assurance of implementation of new information technologies (or techniques) must be identified before major resources are committed).

Developmental activity and demonstration projects in support of the Defense STIP issue areas should be sponsored in the following areas: (1) full-text digital storage, retrieval, and transmission; (2) video disc technology; (3) integration of word processing, data processing, and telecommunications systems: (4) image transmission alternatives and applications; and, (5) data indexing/fact retrieval techniques.

ISSUE AREA II: TECHNICAL DOCUMENT PRODUCTION AND ACCESS

This area reflects the concept that document processing and distribution form a system of interrelated and interdependent components working toward a common purpose. Major components are:

- Procedural management. The principal need is to address inadequacies or omissions in directives, instructions, and documentation needed to manage the creation, production, and distribution of technical information.

- Source/creation and end-user acquisition/utilization process. The principal need is to modernize the methods used by all parties involved in the creation, production, reporting, primary distribution, and utilization of technical information.

- Intermediate document center internal processing. The principal need is to improve the methods, techniques, and procedures used by information centers in the internal processing, bibliographic control, production, announcing, and disseminating of technical information.

- Access controls involving national security and restrictions. The principal need is to implement effective levels of document access or distribution limitations that will encourage exchange of STI within the DoD/DoD-contractor community and provide for more efficient and timely procedures to release limited STI to requestors with a valid need to know.

Issues

A new, consistent, and firm DoD policy and direction on the preparation, dissemination, and bibliographic control of DoD technical reporting should be developed and implemented.

The trend of fewer formal technical reports being produced and distributed, paralleled by an increase in informal forms of reporting that result in less bibliographic control over, and access to, the documentation of DoD RDT&E results, should be addressed and resolved.

Technical report production and distribution systems at the source (and creation level) should be reviewed to determine if new technologies are being used. These new methods should be used in phasing out of dependence on the printing and transporting of a document in favor of full-text digital recording, storage, and transmission as well as other new forms of document production and distribution.

Document acquisition and dissemination systems in use at intermediate document centers not utilizing available new technologies and concepts should be identified.

DoD policy and instructions concerning distribution controls and marking for limited access to technical information should be reviewed and updated. (This is a serious problem in the effectiveness and timeliness of information dissemination and, conversely, to DoD's ability to control access to sensitive information. Similarly, specific assessment, policy and guidance is needed in the area of export control of certain technologies.)

ISSUE AREA III: COMPUTERIZED INFORMATION SYSTEMS AND DATA BASES

This area is concerned with the improvement of computer and telecommunications-related capabilities and services, and how these improvements may be used to enhance interagency, intra-DoD, multiple-information-system and multidata base access. The principal need is to formulate standards, procedures, and developments for the creation of new automated information services, systems, and data bases.

Issues

The DoD-wide RDT&E program related data bases should be reviewed, analyzed, and assessed for effectiveness, accuracy, completeness, and currentness.

Firm, acceptable, and coordinated directives and procedures should be implemented that ensure DoD Military departments and agencies input clearly defined data descriptive of their total DoD R&D programs to these DoD data bases.

DoD Military department and agency acceptable, user-cordial electronic feeder systems for data base input that accommodate both command and local level needs as well as DoD data base needs should be developed.

Standards or minimum levels of compatibility for data elements, command sets, communication protocols, etc., should be developed and enforced.

Intersystem capability, data/resource sharing, and networking among DoD and Federal information systems should be pushed.

Integration of electronic high-speed applications involving word processing, data processing, data and image transmission, electronic mail, etc., should be developed.

ISSUE AREA IV: INFORMATION TRANSFER SERVICES AND APPLICATIONS

This area deals with the broad classification of information products in terms of function and utilization; the utility and degree of difficulty in acquiring these products; and the interaction and interface used by information services in providing accessibility to information products. The principal needs are to standardize the information product acquisition process and to develop a community or system of shared information services.

Issues

Technical library operations, automation, and networking should be supported and improved.

Reference services and support for identifying, using, or acquiring DoD, Federal, and private sector information resources should be improved.

The purpose, policies, and operations affecting the DoD-sponsored IACs should be reevaluated.

Appropriate concepts, techniques, and systems should be employed to provide end-users improved direct access to desired data or facts (as opposed to references).

The diversity of forms, sources, approvals, procedures, etc. used to gain access to all types of military publications (technical manuals, training handbooks, military standards/specifications, etc.) should be reviewed and reduced.

DoD technology transfer and information for industry programs should be improved and expanded. Specifically, levels of service and access to information by state and local governments, colleges and universities, small businesses and individuals should be improved.

Tools and techniques to make it easy to create and/or share specialized data bases to support scientific and technical information or R&D management should be developed.

KEYNOTE ADDRESS
INFORMATION'S IMPACT ON THE R&D MANAGEMENT: BACK TO BASICS

Mr. Walter M. Carlson
Corporate Marketing Consultant, IBM Corporation

INTRODUCTION

Renewing old acquaintances is always delightful, and it is
especially delightful this morning. You have made me feel very
much at home. I am especially happy to participate in any
activity or any effort that helps or holds promise for improving
DoD operations. I have developed a very strong feeling for your
responsibilities, and I am pleased to provide whatever small help
that I can.

BACKGROUND

Hu Sauter mentioned my taking on the job as Department of Defense
Director of Technical Information in 1963. This has given me the
opportunity to go back and ask whether I have the same attitude
now as I did then. Let me assure you that I do.

Everything I have learned indicates that improving the performance
of RDT&E operations in the Department of Defense is still a major
challenge. It needs continuing effort as well as continuing
emphasis.

Harold Brown was DDR&E at the time I joined Defense and I recall
most vividly that he took every occasion he could, when greeting
me or discussing something with me, to inject the remark, "You
librarians ...." All he was trying to do was get my dander up,
and he did. I always came back by saying that my purpose was to
improve DoD operations; not to get more jobs for librarians. I do
not know whether he ever believed me.

I have spent a lot of time since leaving the Department of Defense
examining and reexamining lessons learned in DuPont and the
Pentagon. IBM's operations have provided me with an excellent
observation platform to continue to look at how information is
used. In addition I have served on Government Task Forces during
the last 15 years which has also given me some excellent opportu-
nities to crystalize the basic ideas that I have been developing
over quite a period of time.

Mr. Walter M. Carlson

INFORMATION AS A RESOURCE

What I wish to do this morning is to summarize what I have learned
in context with R&D management.

One thing I have learned is how wrong I was before. I went back
and reviewed speeches that I gave when serving as Director of
Technical Information, when I was pounding the table saying that
information is a resource to be managed the way other resources
are managed. I was saying all those buzz words of the early
Sixties as vigorously as anybody else. Well, these prior views
turn out to be absolutely false.

Information is not a resource to be managed as money and
materials, facilities or energy are managed.

Accountants have ways of managing resources because they can
identify the acquisition, the use, and the disposal of those
resources. Information managers have no way whatsoever of
actually characterizing the acquisition, use, and disposal of the
information that exists on tapes, disks, or in books. Further-
more, when it comes to measuring the value of information they
find themselves tied up in trying to evaluate mental processes
rather than physical processes.

There is no way for accounting systems or management systems to
provide the management of information in the same way as other
resources.

Information systems, of course, need to be managed because they
comprise people and money, as well as facilities and materials.
Probably the one thing that turned me around most completely on
this was a Government Accounting Office (GAO) study in which I
participated several years ago. The purpose of the study was
to set up accounting for the ADP operations of the Federal
Government.

It was found that there were no guidelines in GAO and this had
caused embarrassment in the GAO. The intractable problems that we
encountered changed my way of thinking and illustrated the fact
that we were still a very long way from having the capability to
manage information as a resource in itself.

INFORMATION CONSERVES OTHER RESOURCES

The fact is that information conserves other resources through
better decisions. The name of the game is effectiveness. If you
take that concept and pursue it you will learn how many remarkable
leads that simple idea gives you on where information has its
impact on any management, and particularly on R&D management.

I finally realized during the mid-seventies that when you look at how information gets used you find that it's used to conserve the other resources at the proper decision points. Improved productivity, resource conservation, management performance; all of these things are the consequences of effectiveness.

We also have run some simple tests, and have learned that the accountants can handle these problems when they are brought in at the beginning of a project. If you implement a new information activity and then a year or two later say: "Hey fellows, come tell me how much money we've made as a result of it," they will say: "Go away. Fourteen other things have happened, and we can't go back and figure out what your bright idea did to change things. Why didn't you tell us at the outset, we might have tracked it?"

So it's been done. You bring the accountants in and say: "We are about to make this change. We are going to look at the resources being used now and we would like to be able, after we make the changes, to see what happens to resource consumption. Will you help us?" Almost without exception they will be delighted to develop a new and innovative tracking process to identify the changes when they occur, and to link changes to the way the information flow has been modified.

BASIC TRUTHS

The basic truths having to do with information are that information is actually related to management responsibility and measurements. Each organization has defined objectives and goals, and each organization has assigned the needed resources. Moreover, effective use of information at the decision points ensures the most productive and efficient use of those resources.

I think that this is particularly crucial in R&D management because there are so many different methods of setting goals and measuring progress toward those goals. Over the last 20 years, however, no R&D manager has ever come to me and said that he is having difficulty meeting his goals and objectives because the information systems serving him and his people are ineffective.

R&D MANAGEMENT AND INFORMATION NEEDS

Someone asked when the last time a conference like this was held. My reply was 1964. Along with some people in this room, we helped put together a federal laboratory conference in April, 1964. The conference title was "Technical Information in the Federal Laboratory."

We had the head of National Bureau of Standards, the head of National Institute of Health, Oakridge, Executive Secretary of the Federal Council, and representatives from Agriculture, AEC, NASA, Patent Office, Bureau of Reclaimation, Air Force, Army Missile Command, and Office of Naval Research. In addition, we had academia represented from Utah, Michigan, Yale, and had industry represented by Dupont, and Douglas Aircraft.

There were strong opinions presented. The Head of National Institute of Health (NIH), Jim Shannon, opened the conference and had everybody really sitting up in their chairs by saying (I am going to paraphrase because I do not have his exact text, but I remember the substance of what he said): "I don't know why I'm here. I was invited. I felt given the source of the invitation from the White House that I really ought to be here. I don't have any information problems. I don't know of anybody at NIH who has any information problems so I'm just going to let you know that, and as soon as I can get out of here, I'm going to go back to work." Which he did.

That set a tone that was quite different from what the organizers had anticipated. The conference was held at Goddard Space Center. In the course of the two days of the conference, the Director of Goddard felt compelled to stand up and say: "I agree with what Shannon said. My scientists don't have any information problems. I have never seen us fail in any of our missions because of lack of scientific information being passed around and being used, but let me tell you where the real problem is. The real problem is getting my engineers to find out about new knowledge created by our scientists and other scientists. There is a huge gap there, and I don't have any formula right now for solving it. I think you people should be working vigorously on finding how to transmit useful new knowledge developed out of the scientific R&D area and getting it over into practical application by engineers."

A few months after the conference, the Department of Defense developed plans to bridge the gap between DDR&E and I&L. Several of us were given assignments and the proper authority to look at and manage the DoD and contractor systems for moving technical data throughout the DoD community. It did not surprise me when the current DoD organization evolved.

Later I was charged with setting up an engineering commission within the professional societies to determine scientific and technical information requirements. As a result, I had an opportunity to talk to a variety of R&D and design managers in industry. I seldom heard horror stories from the R&D people, but the engineering design people had them in abundance. They wanted help and they wanted the help concentrated within the engineering community on their unique problems.

Subsequently, I served on the Greenberger Task Force which was reviewing COSATI during the time it was phasing out in the early Seventies. Again the challenge was made to see if the National Science Foundation could produce any evidence of defects in R&D performance caused by poor information systems.

More recently, I have been looking at the National Technical Information Service (NTIS) and continue to find no response to that challenge.

INFORMATION COSTS RARELY MEASURED

One consequence of these observations and feelings among R&D managers is that the cost of an information flow is almost never measured. Costs are imbedded in the organization structure in terms of people, their skills, and the placement of those people and skills. It is up to those people to get work done, to keep management informed, and to ensure there are no surprises from above and from the competition; or in your case from the enemy.

The systems that are set up to supplement the information flow to these people and their jobs are almost always recorded as an overhead account, and it is difficult to learn the actual costs. Reasons for this became very clear to me over time. Management, and particularly R&D management, has many more important hurdles to be concerned about: acquiring and keeping good people, procuring modern equipment, budget constraints and dislocations that occur from changes, project controls, grade-level controls, and the never-ending progress reporting. In general, these things, and administrative trivia, always come first any time you ask R&D managers where their real problems are.

If they stay with you long enough, you will hear about problems with information systems. However, this is rare. It is these hurdles that dominate R&D management planning. We had some other evidence in a very extensive pair of studies performed in the 1960s. It was discovered that information access inhibited meeting job schedules in only about five or six percent of a large number of work situations. Consequently, information flow is not considered a significant problem in the R&D process.

BACK TO BASICS

So back to basics. The basic problem in R&D management is that information people should concentrate on assisting management to overcome those other hurdles instead of talking about new systems just for the sake of new systems.

Yet the papers are full, the magazines are full, and even radio and television now are full of commentaries on new information technology. Many of these technologies are emerging: teleconferencing, speech filing, office networks, PABX's that handle voice, text, and data, as well as computer-based storage and retrieval, and on and on.

There is now an information industry which recognizes the need for the creation and marketing of information products. However, let me remind you, the subject here is information. The subject is not data and the subject is not documents. We are talking about information that gets into the head and ultimately is used.

The pace of acceptance of these new technologies is based on cultural and social factors. They are the ones that do the pacing and set the patterns. The pace is not set by technical imperatives.

We have discovered through in-depth analyses that information gathering habits of technical people seem to be formed the last time they were in a reward and penalty situation having to do with the gathering and use of information. A very high percentage of the time, that was their last exposure to formal education. They received grades, and they have never since been graded in the same sense. What we observed was that people were using what they had taken away from their formal education in the way of their information gathering and use habits.

We also learned that information acquisition for decision making is almost always in the oral mode. People go and talk to someone when they are about to make a decision. They do not read things very frequently. Some reading is done, but the key decision points tend to revolve around oral input. I am not saying print media do not play a role, but they play a very minor role.

Furthermore, evidence at Bell Laboratories, my observations at IBM, and elsewhere have indicated that if you are trying to foster innovation, you move people with the required information from one part of the organization to the other. Know-how is in people's heads, and it is almost never transcribed to paper in a way that can be formally and easily transmitted and used effectively.

The basic truth here is that new information technologies have to work within this framework of existing social and cultural patterns, and it cannot be assumed that ingrained habits are going to change. I know one story on that, having to do with office automation. A consultant who had a lot of experience taught me something in a study I was running for IBM a couple of years ago. He said the worst thing you can do is turn an office automation problem over to a data processing expert. Data processing experts have succeeded remarkably over the years in taking the function

and activities out of the office and putting them over into an electronic environment. This works like a charm and everyone is happy. Credibility is up.

On the other hand, you give a data processing expert an office automation job, and what happens? The expert goes in and tries to remove those tasks and functions out of the office over into the new electronic environment instead of putting electronics into the functions and tasks as they are performed in the office. The expert completely misunderstands the name of the game and will destroy credibility as well as the project in the process. With that observation I have been able to go into a number of organizations and show the causes of exactly what happened.

The point here is in order to implement change in the office environment, one must understand the social and cultural habit patterns as they exist in that office environment, not over in the electronic environment.

THREE CHALLENGES

Now you might conclude that my message is to relax and ignore the information systems. That is not true. I have three challenges to offer this morning: first, to the R&D management; second to the top DoD management; and third to the information systems people.

It seems to me that R&D management's challenge is to monitor what I choose to call the cost of not knowing. This is something that never shows up on the cost sheets, but it is there. Economists talk about opportunity costs, and in many circumstances they actually try to calculate those opportunity costs which, in some sense, are a cost of not knowing. My definition of the cost of not knowing embraces internal disruptions as well as missed opportunities.

I gave a talk in Dayton at an Air Force Systems Command symposium on information and told a story which managed to get into the papers. I think now it is far enough out of currency that I can retell that story and tell you what happened without getting calls from the Pentagon. I told the Dayton meeting that I have concocted a mythical nation which I call the Communist Union for Ballistic Assault, sometimes pronounced CUBA. It turns out that the Air Force Strategic Command was collecting huge amounts of information from the U2 overflights through electronic sources. This information was so highly classified that the tactical arm of the Air Force had no access to it. Fortunately, someone found that out and did something about it in good time. However, the fact remains that the cost of not knowing in that instance could have been disastrous.

I can recall some more immediate examples. One of the costs of
not knowing has affected my own company in an area that I happen
to be closely associated. Several years ago our marketing force
predicted that in 1981 we will probably sell x-number of certain
devices. There was a large argument, but marketing held their
ground, and we built plant capacity for x. Currently, customers
are ordering 1.5 times x devices, and our competition is picking
up that 50 percent of the business for which we did not build
plant capacity. The cost of not knowing is more than just the
profit lost to the competition on those products. It is what is
happening to our share of that marketplace, and the change is
dramatic.

Another case which gets back closer to your area, we have
announced a product which we are discovering we cannot deliver on
time. This is because some of the scientific and engineering
principles are not understood well enough to be able to be
incorporated into the manufacturing process. Any of you who have
moved weapon systems out of the laboratory and into large scale
procurement know that all kinds of manufacturing economies get put
into place. The design often is changed, and if you do not
understand the underlying science and engineering you are in deep
trouble. That cost of not knowing can be equally disastrous.

Well, how large is the cost of not knowing? Is it large enough to
require a corrective action? If it is not very large, and I think
you can determine this, then there is no requirement for spending
anything more on information systems. It may be that, because the
information system is not being strained, you have freedom to
increase goals and set tougher objectives for your organization.
One of the consequences of not wanting to be surprised is that you
have to know a lot more about the information systems; i.e., what
are they doing, who uses them, for what purpose, and at what
costs?

On the other hand, if the cost of not knowing is big and painful,
this is the time to look at your information flow, especially the
people and their skills, their availability, and their placement.
Also needed is to examine some adjustments in order to get your
objectives tied to better performance on a basis of better
decisions, better use of resources, and a clearer identification
of information needs.

The basic challenge offered to R&D management is to judge the cost
of not knowing in the context of today's actual information flow,
to see if there is not something that must be done. I cannot
guess whether you will find that cost big and painful or not, but
if you do, the place to look is how you are spending your people's
time, where you are putting them, and how they are using
information.

My challenge to DoD top management is smooth information flow. Are there inhibitors to smooth flow that are hurting the RDT&E effectiveness? Yes, there are probably some: security restrictions, inter-service rivalry, professional jealousy, travel budget constraints. That list probably is quite long. I am sure these are inhibitors which impact the effectiveness of RDT&E work, and, as I have indicated, doing something about them is outside of the immediate R&D management sphere.

Most important, however, how about the information flow out of R&D? It goes to people in those additional stages of the defense activity. It goes to people in procurement, design, manufacturing, and service. And to support units when the weapon systems materiel gets into the field. Of course, at the same time, you have to keep restricting that information flow and keep it away from the enemy.

What appears in the laboratory in the R&D process may go on to other R&D people, but more importantly it does have to go to design and construction and finally policy-making of one kind or another. If you examine the source of information you will find that it comes from the scientist; it comes from the applier; it comes from the practitioner; and it comes from the public and it goes to those same classes of people. Are there problems of science communication to scientists? Not usually. The scientists talk to each other and share reports. The scientist can communicate directly or put it on the information underground network. The scientists can lecture to each other and they all find out what they need to know when they need the information. There are no problems.

The next question is how does the information transfer from the scientist to the applier? The scientist writes a report that the engineer cannot begin to decipher.

If the scientist talks to the engineer, or to management, or practitioner, or even to the public, the talking is over their heads, and they are trying to talk back. Is this miscommunication their problem? Yes, there are problems.

The challenges are to move scientific new knowledge and R&D information, to the applier, to the practitioner, and even out into the public. What is not wanted is the necessity to carry along a cartload of documents or go through a knothole for the relevant information. Information must be made available, and a way must be determined to make the information flow provide dollar benefits.

The need for top-management is to establish or examine the rewards and penalties for balancing information flow and the cost of DoD operations. That is not an easy challenge to meet, but it is one that demands continuing and relevant attention. The name of the game is the concern for the impact of information on the cost of operations and not on the cost of handling information.

My challenge to the information systems people is somewhat different. Their challenge is understanding the organization in which they are imbedded or for which they are working. There is always a management system of rewards and penalties. Every manager that I have encountered in any line of business, and especially in R&D business, knows how he is measured. He knows the rewards for success, and he knows the penalties for failure. It may be that every manager has something different in the way of his perception of his measurement, but he knows what this is.

If you are an information systems person, you need to learn how that manager thinks he is being measured, and what he does about it. This is the only way information systems people are going to be able to help management. We need to understand some of the organizational behavior consequences that come from measurements and the perceptions of reward and penalties.

Early in my career, I learned from a person who had recently left the Dupont Company and was giving a lecture on his experiences. I had worked with him rather closely and was fascinated to hear him say there are only two kinds of people: those in the organization who want to get ahead; and those who want to get the organization ahead. He also said that the second kind is a very small fraction of the first kind. The very nature of information systems people, because they have been drawn into that profession, are the second kind. They are always geared to trying to get the organization ahead. If you do not understand that 90 to 95 percent of all the other people you are talking to are the first kind, then needless to say, there will be problems in communicating.

How is information used? Too many information systems people make assumptions about that without realizing how many different ways information gets used. Information creates an idea. It permits the selection between choices, and provides alternatives. In many, many ways information creates and forms the question, let alone the solution. Many of the problems you have in R&D is knowing the question. The right question is often more important than anything else.

Furthermore, many people use and get information that gives them pleasure. It confirms something they have known or something they have been doing. It expands their horizons, their mental horizons, and it gives them an opportunity to think about more things, instead of just one thing, or one use.

You do not get information by piling up documents, tapes, and whatever on an individual's desk and assuming that, somehow, because it has been put there that the information is used. That is a totally false assumption.

Then what are we dealing with? From the information point of view it must be recognized that there are value systems that work, there are objectives. There are goals. There are measurements set in place against those objectives and goals. In addition, there are risks. There are costs, and there are measurements of those risks and costs, especially in the Department of Defense situation. These must be given major attention, and priorities must be set. Do not forget that priorities largely are conditioned in today's organizations by conflicts and ambitions as well as quantitative facts.

The word then, is effectiveness and not efficiency. An information system may be made more efficient by cutting its cost or giving higher unit cost performance. But the savings you effect in the cost of information systems are really very small when you compare them to effective use of information for productivity or performance improvements of the organization. Indeed, productivity and performance are where the pay-offs are, and if you are helping and trying to get information systems well integrated, the sources of the payoffs must be identified.

Productivity and organization performance are tough things to get your arms around, but that is what management is trying to do and that is what the information systems professional should be doing. The basic rule, one more time and the last time around: information conserves other resources through better decisions.

OPENING PLENARY SESSION ADDRESS

Dr. George Gamota
Director, Research and Technical Information Office
Office of the Deputy Under Secretary of Defense
for Research and Engineering
(Research and Advanced Technology)

First of all, I want to thank General Gard for allowing us to hold
our conference here. It is a magnificent and historic academic
institution and will serve us well for the next two days. I am
pleased to have the opportunity to participate with you in this
DoD Technical Information Conference for R&D Managers. When plans
were being formulated, I was especially eager for it to be held
here in the Washington area. This is because I wanted to attract
the largest possible number of technical managers in these times
of reduced travel budgets.

Before we get into the purpose and objectives of this conference,
and the workshops, I would like to provide you an overview on the
background of the Defense Scientific and Technical Information
Program; history, status, and then what we need to do; that is,
how do we approach the challenge of the 1980's.

The history of formal technical information management in DoD has
seen extreme variations between high and low interest and support
for over 20 years. Some of the variations in support can be
traced to changes in the political scene, and some relate to the
growth of technologies, while others are just due to neglect.
Squeaky wheels get greased first, and this issue just hasn't
squeaked loud enough; however, I promise you that will change
once we find out what we are missing.

Repeating what Mr. Carlson said earlier, an attempt to create an
integrated technical information system for DoD really only took
place at the beginning of the 1960's. This was because of a
confluence of several factors: a focus of national interest in
technical advancements brought on by the Soviet "Sputnik coup;"
political support for effective information support generated by
Congress, especially the late Senator Humphrey and his staff;
pressures for R&D information support brought about by needs
determined through the Korean and Vietnam conflicts; and, the
emergence of automation as a practical adjunct to large-volume

information handling activities. In addition to Senator Humphrey's support and Secretary McNamara's sympathetic interest, concurrently, an ADP system for funding was being developed. Recognizing the need for leadership in this area, the DoD called upon Mr. Walter Carlson to create a cohesive approach to technical information control for DoD. As the first ODDR&E Director for Technical Information he was instrumental in initiating many of the programs that today are still the core of the Defense Scientific and Technical Information Program. The DoD work-in-progress data bank was begun during this period to provide current R&D funding information.

Mr. Carlson was succeeded by Mr. Walter Christiansen. During Mr. Christiansen's watch, follow-on data banks were created for planning information, the DD Form 1634's, and later, IR&D. The Defense Documentation Center (DDC) was created in 1963, and under the guidance of these gentlemen in ODDR&E, the DDC became a leader in information service and the application of scientific and technical information technology. This was exemplified by the development in the late 1960's and early 1970's of the Defense RDT&E On-Line System (DROLS). DDC now, of course due to its new role, has been renamed the Defense Technical Information Center (DTIC).

Two years ago Dr. Ruth Davis and Andrew Aines developed a comprehensive plan for the management of scientific and technical information programs in DoD. However, partly due to the fact that they both left presumably for the greener fields of the energy program, their plan remains to be set into full motion. That is where I come in. As you know, last summer the responsibility for the Defense Scientific and Technical Information Program was transferred to my office. This is now combined with my other responsibilities related to basic research, technical aspects of the industrial independent research and development, and the energy research and development program. As I see it, research generates information, and conversely, technical information supports research. On that basis, the consolidation of these several and varied responsibilities is logical and appropriate.

My job already was a full and demanding one, but I've been able to profit from the prior work and planning done before I was assigned this responsibility. It is my intention, to utilize as much as possible from the fine work done by those who preceded, but first I want to take a step back and take a new look at what it is that the DoD technical management wants and needs from a technical information program.

From my perspective, currently, there is overwhelming evidence that the management of information is rapidly becoming an essential component of the overall management of any activity or any technical enterprise. Recent actions on the part of the GAO, the Congress, the Office of Management and Budget and many other

elements of the Government emphasize the importance of harnessing the information utility, increasing information effectiveness, centralizing information services management, and reducing paperwork. My primary objective is to provide the DoD research and engineering community with a strong, revitalized technical information program which is consistent with the Federal Government's recognition of information as a valuable resource. Consistent with this objective, I have identified three tasks for my immediate attention.

The first task is a review and updating of existing regulations. These documents that govern the jurisdiction, control, and dissemination of technical information within the DoD are inconsistent, archaic, and much in need of revision. This revision process has been initiated. For example, the Program Directive for Defense Scientific and Technical Information (DoD Directive 5100.36) has been revised. The draft is in the final process of formal coordination with the DoD components. The revised Directive incorporates revisions of two other Technical Information Program Instructions as attachments. One attachment covers the overall Scientific and Technical Information Program concept and assignment of responsibilities previously contained in DoD Instruction 5129.43. Another attachment covers the Defense Technical Information Center replacing DoD Instruction 5100.38. Informal coordination was accomplished with three separate drafts of the regulations. Upon reflection; however, we decided to eliminate overlap and redundancy and merged the three documents into one. This was accomplished by retaining the previously coordinated text as attachments. A single Directive is also expected to be easier to implement than three separate Instructions and follows the new Administration's goal of reducing red tape and bureaucracy. I have mixed feelings on the need for regulations. It's a known fact that creativity and innovation are difficult to pursue with the proliferation of guidelines, rules, and more regulations. I just hope that the revisions will help people to innovate and be creative rather than be used to keep people from doing something different. We want to improve the system, save money for the taxpayer, and have the best national defense possible. That is our mission. Using a regulation as an excuse to get around our goal is a cop out.

My second task is to change the emphasis of the Defense Scientific and Technical Information Program. This new emphasis will begin to serve research and development needs better, to an ever greater degree, by delivering promptly relevant information upon request. This is quite different from the past and current practices of providing an identification of documents containing information, or which are likely to contain the wanted information, with subsequent delivery of the documents themselves. We must develop an interactive information system, a dynamic system; not just settle for passive information retrieval.

And the last task is to effect a closer interaction with those
that the Defense Scientific and Technical Information Program
serves. And that is why so many R&D managers have been invited
here today. The participants of this Technical Information
Conference for R&D managers, the first of its kind in DoD, are
R&D managers, work bench engineers and scientists, and information
specialists, representing the DoD Military departments, DoD
agencies, and DoD contractors. The proponents, creators, and
users of technical information are being brought together under
one roof for a long overdue dialogue.

Thus, the purpose of this conference is to provide me with an
initial mechanism for input to, and consideration of, a revital-
ized and comprehensive Defense Scientific and Technical Information
Program. Consequently, the goal of the conference is not just to
provide visibility for the Program; I want to elicit your support
in the identification and setting of priorities on major issues
confronting the Program. This, in turn, will allow me to direct
tangible areas of priority effort as well as resources within the
Defense Scientific and Technical Information Program. Other than
the mentioned ups and downs, peaks and valleys, interest and
apathy, one major problem in program identification is just that --
identification. What is technical information as it applies to the
Defense Scientific and Technical Information Program. Let us start
by the backward definition of what it is not. This is similar,
I suppose, to what I recently heard that a judge said about
pornography: "I can't define it, but I recognize it when I see it."
Technical information means a variety of things to a variety of
people; thus, it is more easily identified when seen.

Back in the early 1960's, someone theorized that there were four
basic categories of technical information in the Department of
Defense. One was intelligence information, or G-2, as the Pentagon
refers to it, which had then, and still has today, its own very
complex but effective system for information management. For
obvious reasons, most of this information is used only in the
closed intelligence community and that is what we are not dis-
cussing today. A second category was said to be logistics infor-
mation, meaning specifications, engineering drawings, training and
instruction manuals, and the like. This system essentially is
handled by the individual DoD Military departments and agencies and
is acquisitions oriented. It is important, but today, since we
want to take only one bite at a time, we will not discuss this
need. A third category, command and control information, was only
a concept in the early 1960's, in the development stage in the
1970's, and it is now expanded to include command, control, com-
munications, and intelligence (C^3I). Again, although vital to
national defense, this is not the topic on our agenda today.
Research and development information, -- this is what we're talking
about -- the fourth category, had a central depository in DTIC
(then DDC) and operated in a fairly well organized manner, with
regulations which required data submission to this central de-
pository. The technical information system, in the 1960's, was

beginning a new phase and since then the availability of scientific and technical information available has been significantly improved through the speed of retrieval brought about by automation. To some extent the DTIC collections were incomplete then and continue to be incomplete today. Much needs to be done here to bring the Defense Scientific and Technical Information Program up to the state-of-the-art and in that way to increase its usage.

As a scientist and researcher, I am keenly aware of the difficulties in obtaining current and timely technical information, and often of its questionable quality when I get it. I'm now intensely interested in what we can do to improve R&D information in both quantitative and qualitative terms. We want to bring it up to the 1980's, up from the "dark ages" in which we are now.

One great disadvantage to our R&D information system is that it is not a system at all. It has grown by fits and starts without proper attention paid to the need for a complete and balanced source of technical information of all appropriate types. While the channels for obtaining scientific and technical reports, and bibliographic information about them, have been fairly well understood for a long time, R&D management information has not been. This is different from other forms of management information because it needs to be dynamic. It deals with on-going research projects, research and development planning, studies and analyses, and the like. Some products have been available since the mid-1960's, but the information end products have been grossly underutilized. The reason for this underutilization simply is because the system has not responded to changing conditions, and rather than revising the system people improvised by bypassing it. Certain functions of the Military departments and agencies have systems that are more up-to-date than others, but there is a total lack of integration. Consequently, the R&D information provided today tends to be inconsistent, incomplete, and inaccurate since it is often outdated, and efforts to maintain an effective DoD research and development program, and to explain it well to Congress, have suffered.

Another problem, from my point of view, is that some of you engineers and scientists, and R&D managers don't consider that both of these DoD information areas; scientific and technical and R&D management, are YOUR responsibility to utilize and to improve. Yes, you and I are part of the problem.

I must confess that I am frequently appalled to learn our R&D information services are either ignored, underutilized, or taken for granted. This apparent lack of interest in an existing R&D information system has led to the proliferation of do-it-yourself systems and the underground, or private informal contacts to acquire R&D information. My message to all who use any type of

services is if you are not satisfied with the service, don't just complain, do something about it. If you are currently satisfied, you obviously don't know what you are missing. Only by caring and doing something about it can it be improved! We have a $40-million R&D information system that is 20 years behind the times. Industry could not, and would not tolerate such a situation and remain in business. And of course, that is why we are here. To effect dialogue about these problems. Talk them over. Understand our collective needs. Make recommendations for improvements.

It is my desire to seek increased funding support for the Defense Scientific and Technical Information Program, but I will do so only if I become convinced that we are currently making the wisest investment possible. The Military department and agency technical information programs, and DTIC are a part of that program. In order to provide increased support I need realistic goals, objectives, and justification. I would like to establish DoD policy to reflect the current conditions, as well as future needs. I need your input, but you must define very clearly, without being parochial, what the situation is. I need your assistance in coming up with the innovative ideas; new proposals for better R&D information services, in efficient and cost-effective ways.

Most of you selected two conference issue areas that were the greatest interest or concern to you. These issue areas were developed from a variety of regional and functional inputs and, we think, represent the identification of national level informational issues, as they apply to DoD. Each issue will be discussed in your respective issue area panels and they are organized somewhat arbitrarily into four broad categories. I would like to briefly go over these with you for clarification and scope. The categories of issue areas are: (1) technical information program management; (2) technical document production and access; (3) computerized information systems and data bases; and, (4) information transfer services and application.

"Technical information program management" reflects the need to designate responsibility and authority to manage scientific and technical information as a valuable resource, comparable to financial and personnel resources. Incorporating this philosophy, this issue area deals with three sub-issues: administrative, (this is the traditional aspect of management) decision support, and research and development. I feel that the most significant problem here is that for all practical purposes, there is no Defense Scientific and Technical Information Program. This also is true at the Military department and agency level, although, I must admit some DoD components have better systems than others, even though none interact with each other. Dr. Theodore Jacobs is the Panel Moderator for this issue; he is the Associate Deputy for Research, Applied and Space Technology in the Office of the Assistant Secretary of the Navy (Research, Engineering and Systems).

"Technical document production and access" reflects that the system for technical report processing and distribution is becoming more costly, more inefficient, subject to increasing delay, and for these reasons is being bypassed by many in the R&D community. This is the area most often thought of as "technical information;" i.e., report preparation, distribution, and retrieval. A major problem here is the steady decline in formal scientific and technical reporting. What is the cause? What action should be taken? What should be available? What should be clarified? How can we improve our interaction with industry and with each other? Dr. Frank Verderame is this issue area moderator; he is Acting Assistant Director for Research Programs, in the Office of the Deputy Chief of Staff for Research, Development, and Acquisitions, Department of Army.

"Computerized information systems and data bases" is concerned with the improvement of computer and telecommunications-related capabilities and services, and how these improvements may be used to enhance interagency, intra-DoD, multiple information systems, and multidata base access. This area addresses nonprint information services in a nonlibrary environment. To me, the major problem is that the kinds of data bases and reporting systems we relied on previously are not effective. Add-on, manual reporting systems to input to DoD-level data bases have resulted in begrudging input of incomplete, untimely, and inaccurate data. We need to look for systems based on cordial interfaces and transmission of data between local systems and the high-level systems they feed. Our systems should be designed to talk to one another. Dr. Bernard Kulp is the panel moderator for this issue area. Dr. Kulp is Chief Scientist to the Director of Laboratories of the Air Force Systems Command.

"Information transfer services and applications" deals with the broad range of information functions and activities that provide direct information service and effect information transfer. These are the active interface, the conduit in providing access to information services and products. This includes our traditional and nontraditional information services in a library environment. These are our technical libraries, information centers, information analysis centers, and technology transfer functions. The major problem here seems to be a lack of effective automation, networking, cooperation, and resource sharing. New approaches to these services should be endorsed. Dr. Carl Romney is the issue area panel moderator here; he is Deputy Director for Research of the Defense Advanced Research Projects Agency.

Each issue panel moderator is knowledgeable and has expertise in the area assigned. Each moderator will address the issues in their unique way. I have asked them to explore each issue from the point of view of: is it truly an issue; if so, what is the impact; are there workable operational alternatives, and what's the cost of these alternatives; and, lastly, what's the recommended priority.

I urge you to participate in the panels to the fullest -- however, please take your respective organizational hats off and give attention to our total DoD R&D information needs. Your agency or department might have a better system than others -- that's great, but none interact and from the DoD and the taxpayers' point of view they are not adequate or cost effective. Agency A not only needs to know what it is doing, but also needs to know what Agencies B, C, and D are doing. And that information should be at everyone's fingertips. It should not require endless phone calls and reliance on a particular individual's corporate memory. In the past, too much attention has been given to books from technical libraries, and reports from DTIC. What is needed now is a new look toward a dynamic R&D information system and services that work and that can be of use to you.

You have selected some challenging issues for your participation; issues that demand firm answers. The answers to these issues should bring us to a solid understanding of our collective needs, and enable us to establish reasonable goals and objectives. I feel that the product of this conference will enable us to organize and meet with follow-on functional and working groups that will include representation from all levels of users and R&D managers. It is from these groups that the Defense Scientific and Technical Information Program will emerge.

I now challenge each of you to bring your expertise and experience to bear on the issues of these panels, to work for results, and to develop recommendations which I can carry forward and get endorsed as a DoD position regarding R&D issues and/or information common to all DoD.

ISSUE AREA PANEL RECOMMENDATIONS

The discussion and recommendations of the four issue area panels are found in appendix C through appendix F. These recommendations have been summarized and consolidated into the major recommendations for improving the Defense Scientific and Technical Information Program (STIP).

ISSUE AREA I: TECHNICAL INFORMATION PROGRAM MANAGEMENT

The DoD must be committed to strong OSD-level leadership and support for scientific and technical information programs as a necessary and integral aspect of research and development programs. Strong authority and responsibility for support of technical information programs at the Military department and agency levels is expected. Thus, the major issue of the conference was that a recognizable chain of technical information responsibility extending down through the R&D hierarchy is a necessity. Not only is there a need for an improved structure for the management and support of technical information activities, but also the dynamics of information involvement must be addressed. Philosophically, most agree with the notion that whenever possible the results or wisdom obtained for public-supported RDT&E should be available to be shared with the DoD or national R&D community who may benefit from such access. The following is a prioritized list of major recommendations.

Priority One

Appoint a permanent DoD technical information focal point at the OSD level to provide management, coordination among DoD Military departments and agencies, quality assurance, and visibility of the Defense STIP.

Priority Two

Create an advisory council on technical information management composed of the DoD Military department and agency technical information focal points. Charge this group with providing advice and guidance to the DoD technical information focal point.

Dr. Theodore A. Jacobs and Dr. Frank D. Verderame

Priority Three

The DoD technical information focal point should develop a plan to provide for the personnel, financial, and facility resources required to support the Defense STIP.

Priority Four

Designate DTIC as a major element of the Defense STIP to provide centralized multifunctional services and have the DTIC Administrator directly responsible to USDRE.
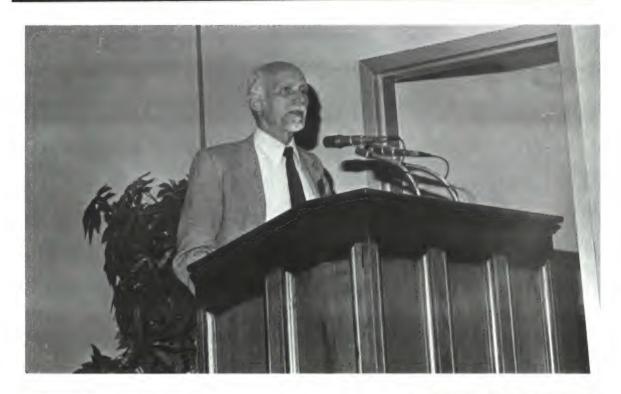
Priority Five

The DoD technical information focal point should develop a plan to provide funding for R&D in technical information services and techniques. This should include both exploratory and applied research.

**ISSUE AREA II: TECHNICAL
DOCUMENT PRODUCTION AND ACCESS**

A new look is necessary at how DoD activities produce, disseminate, and even account for technical reports of DoD-sponsored RDT&E. This is an area where the knowledge of existence of many valid and valuable technical reports is being withheld from the DoD R&D community. New direction is necessary to ensure that the information base, provided for within the Defense STIP, adequately and comprehensively reflects the results of all DoD-supported R&D. Not only is it necessary that new and effective manangement techniques be explored to encourage or reward those who support scientific and technical information programs, but exploration is required in the applications of new techniques, media, and technology to speed up and make more effective the production and access functions. The following recommendations are listed in order of importance.

Priority One

Incorporate provisions for accepting nonprint media into the DTIC system.

Dr. Carl F. Romney and Dr. Bernard A. Kulp

Priority Two

Develop new mechanisms for early dissemination of the results of science and technology efforts and incorporate provisions for accepting this information into the DTIC system.

Priority Three

Develop and maintain a comprehensive data base at DTIC that cites the existence and location of all DoD sponsored technical reports.

Priority Four

Develop a system for evaluating the DTIC technical report collection. This includes the evaluation of subject content areas for balance and completeness as well as the sources of contributors (or lack of contributors).

ISSUE AREA III: COMPUTERIZED INFORMATION SYSTEMS AND DATA BASES

Tremendous strides have been made in developing computer and communication systems and in the application of software support packages and standards to improve the efficiency and use of these systems. These techniques must be applied to technical information requirements. The needs for improvement in data bases to aid the management of R&D programs are apparent and previously have been identified. Such management aids must be more complete and precise in handling programmatic and funding data than the current R&D Program Planning, R&T Work Unit Information System, or IR&D data bases. Through cooperative efforts, techniques should be developed to identify, access, and communicate this data without encumbering laboratories and development centers with additional reporting requirements. In addition, there is a need to improve the operation of data base functions that provide reference to sources of technical information. This need; however, not only references to where information and data might be found, but is for improved access to factual information and data. The following are the major panel recommendations.

Priority One

The DoD technical information focal point should perform a study of the R&D Program Planning, R&D Work Unit Information System, and IR&D management information data bases. The study emphasis should be on improving accuracy, timeliness, and utilization.

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Issue Area One and Issue Area Two Panels

Priority Two

Charge DTIC with the responsibility of providing a single source for reference to all data bases. This will include the developing and maintenance of a centralized "data base of data bases" containing references to DoD and, if appropriate, other Government and commercial data bases, as well as the unclassified foreign literature.

ISSUE AREA IV: INFORMATION TRANSFER SERVICES AND APPLICATIONS

The DoD Information Analysis Centers (IAC) are struggling with low visibility, underutilization, and restricted funding. The IAC program needs strong, coherent policy guidance and direction to address the common administrative needs and operational problems, and to improve efficiency. In addition, a fresh look at the IAC program is needed to improve their usefulness to DoD. Similarly, the Military department and agency technical libraries are caught between inflation on one side, and budgetary/manpower constraints on the other. These technical libraries are looking towards increased automation, networking, and resource sharing to assist in continuing and extending services. The following recommendations are made in order of importance.

Priority One

The DoD technical information focal point should review and analyze the IAC program. The review should explore mission, management, and operations and make recommendations for a dynamic integrated information system.

Priority Two

Continue to retain and enhance DTIC's abilities to maintain classified data within its data bases and provide access to such data.

Priority Three

Charge DTIC with the responsibility to work with the DoD Military departments and agencies to develop a plan to help improve the accessibility by contractors and prospective bidders to Military publications (specifications, manuals, handbooks, etc.) such as those cited in the request for proposals and bids.

Issue Area Three and Issue Area Four Panels

CLOSING PLENARY SESSION ADDRESS

Dr. George Gamota
Director, Research and Technical Information Office

The theme of our conference was the Information Issues of the 1980's. But I think that another theme has evolved from this conference. Perhaps it is similar to the theme of President Reagan's administration; i.e., that the conference represents an excellent first step toward a "new beginning" for a Defense Scientific and Technical Information Program. This new beginning is characterized by renewed emphasis on, and an awareness of the role and value of R&D information in the planning, management, and execution of Defense R&D. Conversely, the necessary role you, the R&D managers and performers, as well as the technical information specialists have in ensuring that these information functions and services are effective tools for R&D. In effect, I am here to say, yes, there is a Defense Scientific and Technical Information Program. You can believe in it; because we are part of it and are committed to make it work.

The beginnings in the 1960's were good, sound, and forward looking. But we got stuck there. Somehow the emphasis and enthusiasm necessary to provide guidance and support to a viable and progressive Technical Information Program faded. Walter Carlson's comments were as true for the past as they will be for the 1980's. Particularly noteworthy were his observations:

> That change will occur at rates paced by cultural and social acceptance, rather than by technical imperatives and innovation. Technical people continue to use information gathering habits they obtained during their formal education and sometimes earlier and its energy consuming to attempt to change this. That the new technologies will become useful to the extent that they work within the framework of these experiences rather than working on assumptions that ingrained habits will change.

What I hope we have done in these two days is to rekindle your awareness of the problems of sustaining a comprehensive and effective Defense Scientific and Technical Information Program. In addition, I think we have awakened a new awareness and interest

among you, particularly those of you from the R&D management community, in the requirements and the scope of our concerns for and the expected benefits to be accrued from technical information resources and services. From your comments and observations, we have gathered useful additional insights to help in identifying the direction and priority of our efforts to improve and expand information programs.

In terms of the management and structure of the Defense Scientific and Technical Information Program, we have identified, at the core of our new beginnings, the need for new levels of leadership and authority for technical information.

Despite the lack of strong or focused guidance and support for technical information programs, our information activities and professionals in DoD have prevailed and even progressed over the years. But we need and expect more. Technological, economic, and social change not only complicate but increase the need for more, and more effective, information services. Our own information demands have become more sophisticated. These technical informa- tion programs require dynamic leadership and support. OUSDRE is committed to this leadership and support as a necessary and integral aspect of DoD scientific and technological programs. We expect, as evidenced by the participants in this meeting, strong authority and responsibility for support of technical information programs at the Military department and agency levels, and that there will be a recognizable chain of technical information responsibility extending down through the R&D hierarchy.

So, what is the bottom line to this conference? It is that we need a revitalized and dynamic information program. But to do that, we need continued active involvement and support from R&D management at all levels. We cannot attack or improve everything at once; we have to zero in on specific priorities or objectives. These two days are just a beginning. We will distill from your deliberations identification of the direction to take with our resources.

In that vein, as a first fruit of our work, I am delighted to say that the DoD Directive 5100.36 on scientific and technical infor- mation has been formally blessed by the USDRE and is now in final coordination stage. Draft copies are available for you as you leave the auditorium.

Our second fruit will be the issuance of the proceedings of this conference with a transmittal letter to USDRE to have him consider our recommendations.

In closing I wish to take this opportunity to speak on behalf of
the Office of the Under Secretary of Defense for Research and
Engineering, as well as for myself in expressing appreciation to:
General Gard for allowing us to meet at the National Defense
University; The very capable representatives from the Army, Navy,
Air Force, and DARPA -- our issue area panel moderators --
Frank Verderame, Ted Jacobs, Bernie Kulp, and Carl Romney;
Hu Sauter and his DTIC people who helped me pull this conference
together and supported the panel moderators; The Defense Logistics
Agency people who managed the logistics of the conference; you,
the participants, who gave time from your very busy schedules to
be with us; and, I want to thank Bob Pearson who did more than
anyone else to ensure the success of this conference and its
smooth operation.

Thank you all very much, and we will see you again.

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APPENDIX B (CONT.)

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APPENDIX B (CONT.)

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APPENDIX B (CONT.)

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	Mr. Martin B. Zimmerman

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APPENDIX C
ISSUE AREA I PANEL DISCUSSION AND RECOMMENDATIONS
TECHNICAL INFORMATION PROGRAM MANAGEMENT

GENERAL

This issue area addressed current problems and shortcomings in
the management and enforcement of the Defense Scientific and
Technical Information Program (STIP) and objectives for improved
program management and execution. Component issues for this
area were identified as including: STIP management structure
and organization necessary for effective program direction,
enforcement, and policy formulation; improved application of
available information systems and techniques to support R&D
managers; and support to information science to develop or
accelerate improvement in information processes and services.
Although not all the subissues were addressed during the issue
area panel discussions, most of the discussion and recommenda-
tions did address the central issue of the critical need for
focused DoD STIP management and strong support for and enforce-
ment of program functions, particularly input requirements.

DISCUSSION AND RECOMMENDATIONS

The panel moderator's approach to starting discussion was to
focus initially on the information services provided by DTIC, as
the central DoD information system, and to ask the question,
"What is needed by R&D managers from such a system?" "What
needs to be improved?" "What needs to be done to effect these
requirements or improvements?"

In the first panel session, after initial comments about the use
of DTIC data bases and services, and contrasting them to other
(non-Government) systems, the discussion quickly disclosed that
what DTIC did with the data it received was not the main
problem. The real problem was that the input of data to DTIC
was grossly inadequate.

Many, if not most, useful technical reports prepared under DoD
RDT&E sponsorship are not provided to DTIC. Work Unit (DD 1498)
and Program Planning (DD 1634) data base input is untimely and
incomplete.

APPENDIX C (CONT.)

Interestingly, panel members concerned about in-house DoD R&D reporting felt that the in-house project monitors were the biggest nonreporting culprits. On the other hand, others felt that technical report input from R&D contractors was the greatest area of noncompliance and that contract monitors were the most remiss for not enforcing, and in many instances deliberately circumventing, technical report input requirements. There was general agreement that requirements for input of DoD STI to DTIC (including technical reports as well as data base input) are well documented in a wide range of DoD and Service regulations and instructions. The problem is that these requirements are largely and regularly ignored. Clearly, there is an almost total lack of enforcement. One observation was that the monitors of R&D effort tend to cut costs when it comes to information transfer -- once the research and development is finished, the results are frequently provided to the sponsor in a way not acceptable to DTIC. There is little inclination to spend additional time and money on a technical report for the record. The contract monitor (and his/her equivalent for in-house work) has real control over what and how reports are prepared or disseminated. The management and oversight of input to DoD STI functions must be strengthened.

Many voices, particularly those of DoD R&D contractors, were raised in concern over the timeliness and completeness of the Work Unit and DD 1634 data bases. The comment was made that "You (in the DoD STIP) must listen more to industry's needs. Industry does 75 percent of the R&D work but has the worst sources of information." They decried the poor quality and lack of input to the DD 1634 data base. "DoD does not need this data but we (industry) do." They felt that the information provided by the triservice offices was not timely; there were long delays in the availability of such documents as the Program Element Descriptive Summaries (PEDS). The contractors need more comprehensive access to Work Unit data. They still cannot access 50 percent of the records. They have been asking for years for a change to the contractor-exclusion field that limits WUIS access, but there was no one available at DoD to help override this restriction.

Of particular concern to both DoD and contractor representatives was the fear that DTIC is moving toward providing only unclassified data via the Defense RDT&E On-Line System (DROLS). By and large, the panel members were complimentary toward DTIC and fairly satisfied with its services and responsiveness. They felt that DTIC was doing the best it could considering the pervasive lack of compliance with, and enforcement of, input requirements. The issue of providing (or not providing) classified data base access, however, raised the greatest

APPENDIX C (CONT.)

criticism of DTIC. A feeling was expressed that DTIC was placing efficiency ahead of effectiveness and service to its constituency. Statements were made that the DTIC data base could become even more useful if the classified content were encouraged to increase.

Final comments of the first day centered about the problem that data base input effort (as well as the data reported) is frequently perceived as doing little or nothing to benefit the inputting agency. This often is seen as an add-on effort that parallels or duplicates other reporting of similar data. Another aspect of the need for stronger, centralized control of STI is the need to tie together or coordinate management information reporting systems and requirements.

The second panel session, although starting out with the same set of questions, seemed to quickly pick up where the first group left off on the need-for-better-management issue. An effective statement of the issue was that, "We, the STI community, are a very segmented community -- we need an integrated program. We need high-level recognition within DoD and the R&D community for STIP and their objectives." This includes not only recognition of a DoD STIP as a necessary and valuable R&D resource but also effective management support, an information budget, and better recognition of the information profession. Comments centered about the need for an "information czar," although not the autocracy that the phrase implies. A strong OSD-level information program office should exercise overall STIP authority and responsibility. Such authority must provide for policy formulation, program plans, adequate budgets, and enforcement of STI-related regulations.

The notion of reward and penalty kept recurring in both panel discussions as a way to increase support of STIP and requirements by the DoD R&D community. Strong program leadership must be capable of imposing sanctions or other incentives on those who don't comply as well as rewarding those who are exemplary.

It was also brought out that lack of STI authority and leadership was a problem also at the Service and Agency levels. A visible and effective heirarchy of STI management is necessary to support STIP through the Service, Command, Center, and Laboratory levels, down to the individual scientists or project managers who must learn why and how to input data to STI systems or effectively use STI services.

APPENDIX C (CONT.)

The serious potential impact of the Paper Work Reduction Act of 1980, PL 96-511, was discussed as an example of the need for strong STIP leadership and policy formulation to establish the proper role of the STIP during implementation of PL 96-511.

Several approaches were recommended for achieving the desired strong central program management/policy-setting function. The first was to create a separate Defense Technical Information Agency, of which DTIC would be a major component, reporting directly to USDRE with the charter and authority to carryout USDRE's STI mission. It was felt this would provide the program necessary clout and funding. It would circumvent the problems of staffing an STIP office at the OSD level and place DTIC directly within an R&D activity, not having to report through the Defense Logistics Agency. It was suggested that an ad hoc group be set up to determine if such an information agency is truly feasible and desirable.

Another approach would be to create a high-level Board of Governors, or policy-setting committee, consisting of USDRE and Service/Agency-level R&D members. This group presumably would provide advice and support to the person or office within USDRE responsible for overall DoD STIP oversight.

A related approach was to put out an RFP, under USDRE sponsorship, to a recognized management consulting company to develop and recommend STIP organization, objectives, and plans, similar to the Raymond Report ("Management Review of the Technical Information Program of the DoD, May 1967," a report for ODDR&E by a study team chaired by Dr. Richard Raymond of the General Electric Company).

Another shorter range recommendation was that DTIC, or some other spokesman, with USDRE endorsement, plan a presentation to the Joint Logistics Commanders that would bring to them the issues of concern in the STIP and elicit from them support for the program and necessary action to improve program participation.

SUMMARY OF CRITICAL ISSUES

The following four issue statements capsulize the discussions of the two panel sessions and require priority attention.

. a. There is a desperate need for better, more effective management of defense STI programs from the top (OSD-level) down.

APPENDIX C (CONT.)

b. Although DTIC's services and systems are good, enhancement is necessary to improve their responsiveness and the quality of the data provided; however, the seeds of such improvement are not totally under DTIC's control.

c. Its users want DTIC to retain and enhance its abilities to maintain classified data within its data bases and to provide direct, on-line access to such data.

d. Significantly increased input to the DTIC-maintained data bases and document collection is necessary to make more useful STI available to the R&D community through better enforcement of existing direction and issuance of new directives.

APPENDIX D
ISSUE AREA II PANEL DISCUSSION AND RECOMMENDATIONS
TECHNICAL DOCUMENT PRODUCTION AND ACCESS

GENERAL

This area deals with the process of creating, producing, processing, and distributing technical documents. Also included is the need for improved procedural management in the directives, instructions, and documentation required to manage the process of production and access to technical information.

ISSUE/DISCUSSION/RECOMMENDATIONS

Issue One

Do we structure a reasonable and enforceable policy to ensure timely preparation and entry into prescribed distribution channels of scientific and technical reports within DoD?

Discussion

a. The prime purpose of the scientific and technical report is to inform the reader about research and development work that has been done; it is results oriented.

b. The scientific and technical report identifies the major contributors to a given field and permits an assessment of their accomplishments and capabilities.

c. The written scientific and technical report, carefully presenting the results of research and development, has been the mainstay of technological progress of our civilization. However, we must recognize that alternative means are now available for capturing and distributing information for future use.

d. Researchers, engineers, and managers must recognize and fulfill their obligation to document results of their efforts.

APPENDIX D (CONT.)

Recommendations

Policy and guidance for defense scientific and technical information reporting should include:

    a. Provision for considering the reporting of research results a major performance standard for DoD scientists and engineers.

    b. Provision for accepting as scientific and technical reporting nonprint media that formed the basis for decision making, i.e., briefing charts and videotape presentations.

    c. Provision for submission of short, early, synoptic publication of results which alert the user to existence of the completed work and identity of the originating organization.

Issue Two

Are originating organizations deterred from submitting reports to secondary distribution centers because they (the originators) cannot control dissemination of information to competitors or to foreign governments?

Discussion

    a. This was perceived as a low-priority issue or a nonissue.

    b. Among panel participants there was no concern over the Freedom of Information Act with respect to scientific and technical reports.

Recommendations

None

Issue Three

Alternatives to hard copy: what should be the short-, medium-, and long-range goals for preparing and submitting reports, alerting potential users, and producing output?

APPENDIX D (CONT.)

Discussion

a. Several input/output alternatives to hard copy exist for documenting research results: microform, video disk or tape, motion film, sound recording, and magnetic storage (e.g., tape, disk).

b. Within cost constraints, what would be the volume of demand for each of the above alternatives?

c. Responsibility for alerting users to the existence and source of a report should reside with DTIC. (The NTIS "Tech Notes" provide a good example of how "alerting" might be accomplished.)

d. Within cost constraints, what should be the extent of proliferation of input/output terminals among originating agencies and users for receiving, alerting, and transmission?

e. How can various kinds of inputs be stored for ready access and retrieval?

f. Should we push for standardization of user interfaces with not only one but several repositories, i.e., DTIC, NTIS, NASA, DoE?

g. Electronic transmission of full-text classified reports will involve costly, secure channels.

Recommendations

a. A study should be made of user preferences with respect to output media and delivery methods.

b. A study should be made to determine user preferences for various "alerting" methods.

c. DTIC should be the central archive for DoD scientific and technical reports.

d. DTIC should store at least one copy of scientific and technical reports and provide secondary distribution. Alternatively, DTIC should provide a referral service to direct users to the sources for reports not held in the DTIC collection.

APPENDIX E
ISSUE AREA III PANEL DISCUSSION AND RECOMMENDATIONS
COMPUTERIZED INFORMATION SYSTEMS AND DATA BASES

GENERAL

This area is concerned with computerized information systems, data bases, and how improvements thereto may be used to enhance the capabilities and services provided by multiple information systems and multidata base access.

In the opening remarks the panel moderator set the parameters for panel participants by limiting the discussion to what managers want out of data bases rather than the ADP hardware and software necessary to support the data bases. The panel moderator shocked several of the panel participants by asking, "Do we need the data? Do we really need a centralized technical data base?" The panel answered that a centralized technical data base was cost effective by at least 20 to 1 when compared to the manual method of retrieving data in the typical library.

DISCUSSION

a. Users must be able to get to the person that has the data. Person-to-person contact is needed.

b. Quality of data (especially DD Form 1634 data) stored in DTIC is highly questionable as to completeness and timeliness.

c. Multiple levels of data bases now exist throughout DoD, e.g., DTIC at Level 1, MASIS (Air Force Data Base) at Level 2 and local laboratory library at Level 3.

d. Different data bases have different characteristics depending on the makeup of the data base. There is a distinction between facts (completed research) and planning data as well as between reference data bases and actual hard fact data bases.

e. Information Analysis Centers (IACs) have a unique capability to interpret hard data to present information that goes well beyond DTIC's capability to provide access to references to data.

APPENDIX E (CONT.)

f. The procurement system within DoD to obtain copies of documents, books or data sheets is archaic. Central authority or central accounts with universities and other information sources was offered as a possible solution.

g. Incentives for the report originator to do a better job are needed.

h. Direct access to a proliferation of data bases through internets is a difficult technical problem and should only be considered as a long-range solution.

i. As a first step in the standardization of data bases, an authoritative set of data element definitions is required.

j. The above observations can be summarized into two major topics:

The information system must be user-oriented and the person entering the data must be responsible for the quality, quantity, and timeliness of the data. Little fault was found with the processor or user other than the limitation imposed by the person providing the data input.

The proliferation of data bases is necessary because of the wide variety of topics that need to be covered. The IACs can be considered as having a unique capability to interpret data and present information. The technical problems associated with internetting data bases will be difficult and costly and for the next several years, interface to the data bases by human operators will be required.

RECOMMENDATIONS

a. There is an absolute need for a full-time data administrator at the OUSDRE level to provide visibility, management emphasis, and quality control to the three major components (input-processor-end user) of the technical information system. The data administration entity will also guarantee cost-effectiveness of the DoD technical information program.

b. The solution to the observations dealing with the proliferation of data bases is to establish a centralized "data bases of data bases" containing references to DoD and other Government and commercial data bases as well as the unclassified foreign (nonintelligence) literature.

c. In addition to being a supplier of data and documents in selected areas, DTIC should assume the role as DoD's centralized all-source reference service.

APPENDIX F
ISSUE AREA IV PANEL DISCUSSION AND RECOMMENDATIONS
INFORMATION TRANSFER SERVICES AND APPLICATIONS

GENERAL

This area deals with the broad classification of information products in terms of function and utilization; the utility and degree of difficulty in acquiring these products; and the interaction and interface used by information services in providing accessibility to information products. The principal need is for the standardization of the information product acquisition process as well as the development of a community or system of shared information services.

DISCUSSION

General discussion centered around three major categories: (1) operation, automation, and networking of technical libraries and information centers; (2) Information Analysis Centers (IACs); and (3) other information needs and problems. Specific points covered include the following:

   a. Technical library operations, automation, and networking should be supported and improved.

   b. Reference services and support for identifying, using, or acquiring DoD, Federal and private-sector information resources should be improved.

   c. The purpose, policies, and operations affecting the DoD-sponsored IACs should be reevaluated.

   d. Appropriate concepts, techniques, and systems should be employed in order to provide end-users improved direct access to desired data or facts (as opposed to references).

   e. The diversity of forms, sources, approvals, procedures, etc., used to gain access to all types of military publications (technical manuals, training handbooks, military standards/specifications, etc.) should be reviewed and reduced.

APPENDIX F (CONT.)

f. DoD technology transfer and information for industry programs should be improved and expanded. Specifically, levels of service and access to information by state and local governments, colleges and universities, small businesses and individuals should be improved.

g. Tools and techniques should be developed to make it easy to create and/or share specialized data bases to support scientific and technical information or R&D management.

RECOMMENDATIONS

Operation, Automation, and Networking

The panel felt that networking and automation are an important aspect of information transfer, not so much to speed the flow of information, but to foster the sharing of resources which in turn assists in increasing productivity. There was strong emphasis from "user" members present that quality and completeness are more important than speed. However, there was a strong plea for quick access to information concerning the "leading edge of research." Generally, this need is for information on new ideas, what work is underway, preliminary results, etc., well in advance of publication of technical reports. The R&D Program Planning File (1634) at DTIC was cited as a critical element to this point.

Other benefits that were highlighted include the establishment of formalized lines of communication that facilitate access to information and people (across disciplines), assist in avoiding redundancy in the planning process, and aid in the updating of data files. It was also recognized that automation is necessary to manage large quantities of data but at the same time one should be judicious with its use. For true internetting, serious problems of standardization, security, and apportionment of cost would have to be solved.

There was a consensus that there is a definite need for knowing what information is available and where to get it. The importance of inputting documentation to DTIC was stressed. However, it was recognized that serious problems exist that inhibit this flow of information and that these should be addressed within the Defense Scientific and Technical Information Program (STIP). Some of the problems discussed include: the impact of the Freedom of Information Act (FOIA), the lack of source control, and security classification. Some offered the comment that DTIC's move to declassify its data base would not only reduce its utility because it would be less complete, but would have an inhibiting effect on the source input problem.

APPENDIX F (CONT.)

Information Analysis Centers

The Information Analysis Center (IAC) concept is still well
received. Much praise was given to the work performed by the
IACs and their utility. However, serious concern was expressed
that the IACs are not being used to the fullest extent. It was
generally agreed that the low visibility of the IAC was a major
contributor to underutilization. This issue should be given a
high priority in the STIP. It was recommended that a high-level
DoD policy concerning the IAC program be issued which would
serve as a catalyst in promoting the program. It was also
recommended that there be a standardized procedure for ordering
material from all IACs. At present, some feel that inconsistent
ordering procedures contribute to inhibiting IAC use.

The subject of inadequate funding of the IAC program was
discussed. It was noted that IACs should not have to charge
DoD customers, which inhibits use by agencies or individuals
that do not have ready means for paying. The point was made
that many IACs focus their individual functions on money-making
products and services at the expense of those that do not
attract as much income. There was some question as to whether
this should be the way to go. Further, the amount of money made
is not an accurate measure of the value of data provided to
users and should not be used as a criterion for evaluating the
effectiveness of an IAC.

Many felt that the name "Information Analysis Center" tends to
mislead potential customers. It was recommended that the word
"Information" be dropped. The use of "Analysis Center" more
truly reflects the work being performed and the mission of the
center. Another recommendation was that there should be a
strengthening of the oversight responsibility of the IAC pro-
gram to ensure that each is continuing to provide a necessary
function. There was a strong feeling that the DoD IAC Program
merits high priority in the STIP.

Other Information Needs and Problems

A very strong recommendation, requiring high priority, was made
to reestablish individual Scientific and Technical Information
focal points at all levels within DoD and the Military services
to promote the policies of the STIP and to ensure consistency in
the information transfer process.

APPENDIX F (CONT.)

In a related issue, concern was expressed that there is evidence
of pressure being applied to disestablish some remaining infor-
mation focal points such as the Technical Liaison Industrial
Offices. It was felt that these liaison offices serve a very
important function and if abolished would further lead to the
deterioration of the information transfer process.

It was stated that DoD contractors are experiencing difficulties
in obtaining documentation referred to in many DoD RFPs. It was
recommended that DTIC serve as a central depository of "RFP
packages" in order to save the time and money expended in
gathering the required information.

A recommendation was made to establish a standard RFP clause that
requires the contractors who submit proposals to include in their
proposal the results of a literature search and a review of the
subject to be contracted to include past results, on-going work,
and planned efforts.

Knowing what is available and where it is available was addressed
several times as a continuing problem. In this regard, it was
suggested that DTIC should serve as the central referral point
within the DoD to maintain a "data base of data bases."

Discussion emphasized the fact that much research information
produced by other parts of the Federal Government is extremely
valuable to DoD. Therefore, the STIP should include a goal of
achieving greater interagency cooperation by linking up with
other Federal information activities.

The lack of quality and incompleteness of the collection of
1634's, 1498's, and 1473's was a major concern. It was suggested
that improvement could be forced by somehow connecting the input
of this information with the budget process (within DoD only).